



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,231	05/07/2001	Peter Krulevitch	IL-10581	3998
7590	06/07/2005			EXAMINER
Alan H. Thompson Assistant Laboratory Counsel Lawrence Livermore National Laboratory P.O. Box 808, L-703 Livermore, CA 94551			SIMONE, CATHERINE A	
			ART UNIT	PAPER NUMBER
			1772	
DATE MAILED: 06/07/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.	KRULEVITCH ET AL.
09/851,231	
Examiner Catherine Simone	Art Unit 1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) Responsive to communication(s) filed on 31 January 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 11-16 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Withdrawn Rejections***

1. The 35 U.S.C. 102 rejection of claims 11-15 as being anticipated by Biasse et al. of record in the Office Action mailed 11/22/04, Pages 3-4, Paragraph #7 has been withdrawn due to the Applicants amendment filed 1/31/05.
2. The 35 U.S.C. 103 rejection of claim 16 over Biasse et al. of record in the Office Action mailed 11/22/04, Pages 4-5, Paragraph #9 has been withdrawn due to the Applicants amendment filed 1/31/05.

***Claim Objections***

3. Claims 11 and 14 are objected to because of the following informalities: In claim 11, line 2, the recitation “produced by the method” should be deleted. In claim 11, line 8, the recitation “microchanel” should be corrected to read “microchannel”. In claim 11, lines 8-9, the recitation “an annealed open microchannel that has been produced by annealing” is redundant in saying the microchannel is annealed. It might be better to either delete “annealed” before “open microchannel” or to delete “that has been produced by annealing” after “microchannel”. Claim 14 is redundant in reciting “said etched substrate and said annealed substrate are selected from the group consisting of glass members, glass and silicon members, glass and polymer members” and then reciting “and members selected from the group of glass, silicon and polymers”. It might be better to correct claim 14 to recite “wherein said etched substrate and said annealed substrate are selected from the group consisting of glass, silicon, polymers and mixtures thereof.” Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 11 and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Krulevitch et al. (US 6,437,551 B1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Krulevitch et al. discloses an apparatus having a sealed microchannel therein comprising an etched open substrate, an etched open microchannel in the etched substrate, an annealed substrate positioned on the etched substrate that covers the etched microchannel in the etched substrate, an annealed open microchannel that has been produced by annealing in the annealed substrate over the etched microchannel in the etched substrate, and a bond connecting the etched substrate to the annealed substrate wherein the etched open microchannel and the annealed open microchannel comprise the sealed open microchannel (see col. 6, lines 37-47). Regarding claim

Art Unit: 1772

13, note the etched microchannel in the etched substrate and the microchannel in the annealed substrate form a circular microchannel (see col. 6, lines 40-42). Regarding claim 14, note the etched substrate and the annealed substrate are glass (see col. 6, lines 39-41 and col. 16, lines 9-11). Regarding claim 15, note the bond comprises fusion or anodic bonding (see col. 9, lines 51-59).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krulevitch et al. (6,437,551).

Krulevitch et al. discloses an apparatus having a sealed microchannel therein comprising an etched open substrate, an etched open microchannel in the etched substrate, an annealed substrate positioned on the etched substrate that covers the etched microchannel in the etched substrate, an annealed open microchannel that has been produced by annealing in the annealed substrate over the etched microchannel in the etched substrate, and a bond connecting the etched substrate to the annealed substrate wherein the etched open microchannel and the annealed open microchannel comprise the sealed open microchannel (see col. 6, lines 37-47). However, Krulevitch et al. fails to disclose an annealing temperature in the 600° to 800°C range and a depth of about 10 µm and a width of about 20 µm for the annealed microchannel. Krulevitch et al.

Art Unit: 1772

does, however, teach an annealing temperature of 550°C (see col. 9, line 54) and a microchannel having a depth of 20 µm (see col. 12, lines 65-66) and a width of 10 µm (see col. 13, lines 1-2). Therefore, the optimum ranges for the annealing temperature and the width and depth of the microchannel would be readily determined through routine experimentation by one having ordinary skill in the art depending on the desired end results. Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have modified the annealing temperature in Krulevitch et al. to be in the 600° to 800°C range and to have modified the depth and width of the microchannel in Krulevitch et al. to be of about 10 µm in depth and of about 20 µm in width, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. *MPEP 2144.05 (II)*.

#### *Response to Arguments*

8. Applicant's arguments with respect to claims 11-16 have been considered but are moot in view of the new ground(s) of rejection.

The declaration under 37 CFR 1.130 filed 8/26/04 is insufficient to overcome the 35 USC 102(e) rejection of claims 11 and 13-15 as being anticipated by the Krulevitch et al. reference (US Patent No. 6,437,551). A 37 CFR 1.130 declaration can only overcome a 35 U.S.C. 103 rejection on a U.S. patent which is not prior art under 35 U.S.C. 102(b). A 37 CFR 1.130 *does not* overcome a 35 U.S.C. 102(e) rejection. See MPEP 718.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catherine Simone whose telephone number is (571)272-1501. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*CAS*

Catherine A. Simone  
Examiner  
Art Unit 1772  
June 1, 2005

*S.N. Nolan-Rayford*  
**SANDRA NOLAN RAYFORD**  
PRIMARY EXAMINER *63-05*